REMARKS

Claims 1-59 are currently pending in the subject application and are presently under consideration. Claims 1, 4, 6-9, 21, 24, 38, 41-42, 49, and 52-54 have been amended as shown on pp. 2-14 of the Reply. In addition, claims 3, 5, 22 23, 39, 40, 50 and 51 have been cancelled as shown on pp. 2-14 of the Reply.

Favorable reconsideration of the subject patent application is respectfully requested in view of the comments and amendments herein.

I. Rejection of Claims 1-2, 10-14, 21, 26-31, 38, 43-44, 48-49, and 55-56 Under 35 U.S.C. §102(e)

Claims 1-2, 10-14, 21, 26-31, 38, 43-44, 48-49, and 55-56 stand rejected under 35 U.S.C. §102(e) as being anticipated by Patterson, et al. (US 2003/0050008) (hereinafter "Patterson"). Applicants' representative respectfully traverses the rejection of claims 1-2, 10-14, 21, 26-31, 38, 43-44, 48-49, and 55-56 under 35 USC § 102(e) as being unpatentable over Patterson.

> For a prior art reference to anticipate, 35 U.S.C. §102 requires that "***each and every element*** as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950 (Fed. Cir. 1999) (*quoting Verdegaal Bros., Inc. v. Union Oil Co.*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)) (emphasis added).

The invention of Patterson is generally directed to satellite communications systems that can provide incremental global broadband services using Earth-fixed cells. Patterson is generally concerned with implementing scalable satellite systems comprising an increasing number of NGSO satellites. To this end, satellite communications between terminals and gateways through a satellite uplink are discussed generally. As part of this generalized discussion, Patterson cursorily raises aspects of a reverse link by stating, "The reverse link is the communication path from the user terminals in a service cell via the serving satellite to an associated gateway...In contrast to the forward link which has a single data source, the reverse link must support multiple user terminals transmitting simultaneously…The **gateway** uses a medium access control (MAC) layer protocol **to allocate these channel resources** (bandwidth

and time slots) among user terminals **on demand**...The **gateway allocates resources among user terminals** based on the capacity requested by each user terminal, the available link capacity, and the waveforms that can be supported by the user terminal under the current link conditions...It may also be important for certain applications to maintain link availability as high as possible. This can be accomplished by changing to more robust waveforms at low bit rates when link conditions degrade." (*See* Patterson at [100]-[101]).

In contrast to Patterson, the subject application addresses the return link specifically and in detail not seen in Patterson. Generally, the subject application discloses compensating for noise in the reverse link without changing the interference relationship among a plurality of terminals employing the return link. To this end, the data rate can be adjusted and the transmission power levels can remain unchanged. The signal to noise ration can be employed as a measure of the quality of the return link signal and used as a metric for determining how to adjust the data rate to compensate for changes in the link conditions.

Thus, as claimed in independent claims 1, 21, 38, and 49, a change in the return link signal quality can be identified **at a gateway**, wherein the change can be related to the change in the signal to noise ratio, this metric can be received **at a terminal**, and the data rate can be adjusted **at the terminal** based on the indicated change in the return link signal. This is in stark contrast to the explicit, albeit cursory, disclosure of Patterson, wherein, "The gateway uses...Mac...to allocate...channel resources..." (*see* Patterson at [101]) and, "**The gateway allocates resources among user terminals**..." (*Id.*, emphasis added) Clearly, Patterson asserts that control and decision making over adjustments to the return link parameters is performed by the gateway as compared to the present invention in which such control and decision making is based in the terminal. Where *Patterson states explicitly that **the gateway controls*** return link parameter decision making, Patterson does not disclose this same decision making control in the terminals, and thus does not disclose each and every element of the invention as claimed in the subject application.

Moreover, claims 2 and 10-14 depend from claim 1, claims 26-31 depend from claim 21, claims 43-44 and 48 depend from claim 38, and claims 55-56 depend from claim 49, which are believed to be patentably distinct from Patterson as asserted *supra*. The rejection of dependant claims 2, 10-14, 26-31, 43-44, 48, and 55-56 under 35 U.S.C. §102(e) is therefore obviated where claims 1, 21, 38, and 49 are allowable. Applicants therefore respectfully request that the

Examiner withdraw the rejection of claims 1-2, 10-14, 21, 26-31, 38, 43-44, 48-49, and 55-56 under 35 USC § 102(e) as being obvious over Patterson.

II. Rejection of Claims 3-9, 22-25, 39-42, and 50-54 Under 35 U.S.C. §103(a)

Claims 3-9, 22-25, 39-42, and 50-54 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Patterson, et al. (US 2003/0050008) in view of Lapaille, et al (US 6,539,214) (hereinafter "Lapaille"). Claims 3, 5, 22, 23, 39, 40, 50, and 51 have been cancelled. Claims 4, 6-9, 24-25, 41-42, and 52-54 thus remain rejected over Patterson in view of Lapaille. Applicants' representative respectfully traverses the rejection of claims 3, 5, 22, 23, 39, 40, 50, and 51 under 35 USC § 103(a) as being unpatentable over Patterson in view of Lapaille.

The invention of Lapaille is generally directed to estimating techniques for noise in a given digital signal. Lapaille is clearly states that the functionality of these noise estimating techniques is for adjusting the transmission power such that thermal noise is kept to a minimum for the given communications link conditions. In essence, Lapaille states that where the noise can be estimated, transmit power levels can be adjusted to the minimum needed to effect a communications link with a given signal to noise ratio. Lapaille states, "The problem which the invention aims to solve is to allocate...a power resource...such that this **power is that just necessary for the signal to noise ratio to meet specifications**." (*See* Lapaille col. 5, ln. 23-28, emphasis added). Lapaille also later states, "In the case of a satellite transmission system, **the adjustment of transmission power**, and therefore he estimation of the signal to noise ratio, has particular importance, since the power received by the receivers can vary to a great extent, notably because of variations in the propagation conditions due to [weather]..." (*See* Lapaille col. 5, ln. 45-51, emphasis added).

This clearly contrasts with the claimed invention **wherein the interference relationship among the plurality of terminals in not changed** (see each of independent claims 1, 21, 38, and 49). Where Lapaille suggests *adjusting the transmission power levels* for the communications link ***this directly affects the interference relationship*** between a plurality of terminals, as would be well known by ne of ordinary skill in the art. The claimed invention specifically and explicitly states that this is not done. By using time averaging of random noise signals, for example, in combination with longer duration signal coding without adjusting transmission power levels, the signal to noise ratio can be improved, "without changing the

interference relationship among the plurality of terminals", (*see* claims 1, 21, 38, and 49), and is polar opposite form the teachings of Lapaille. Thus, Lapaille does not cure the deficiencies of Patterson with regard to control of the data rate being located in the terminals rather than the gateway. Further, **Lapaille explicitly teaches away** from employing signal to noise ratios as indicators for parameter adjustments that **do not change the interference relationship** among system terminals.

Moreover, claims 4 and 6-9 depend from claim 1, claims 24-25 depend from claim 21, claims 41-42 depend form claim 38, and claims 52-54 depend from claim 49, which are believed to be patentably distinct from Patterson as asserted *supra*. Lapaille does not cure these deficiencies of Patterson. Thus, the rejection of dependant claims 4, 6-9, 24-25, 41-42, and 52-54 under 35 U.S.C. §103(a) is therefore obviated where independent claims 1, 21, 38, and 49 are allowable. Moreover, Lapaille teaches away from any combination with Patterson that can reasonably be interpreted to disclose the claimed invention. Applicants therefore respectfully request that the Examiner withdraw the rejection of claims 4, 6-9, 24-25, 41-42, and 52-54 under 35 USC § 103(a) as being obvious over Patterson, in view of Lapaille.

III. Rejection of Claims 17 and 34 Under 35 U.S.C. §103(a)

Claims 17 and 34 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Patterson, et al. (US 2003/0050008) in view of Hogberg, et al. (US 6,198,730) (hereinafter "Hogberg"). Applicants respectfully disagree for at least the following reason. Independent claim 1, from which claim 17 depends and independent claim 21 from which claim 34 depends, are believed to be allowable over Patterson alone, as asserted *supra*. Hogberg does not correct these particular deficiencies. The rejection of dependant claims 17 and 34 under 35 U.S.C. §103(a) is thus obviated. Applicants respectfully request that the Examiner withdraw the rejection of claims 17 and 34 under 35 USC § 103(a) as being obvious over Patterson, in view of Hogberg.

IV. Rejection of Claims 15-16, 18-20, 32-33, 35-37, 45-47 and 57-59 Under 35 U.S.C. §103(a)

Claims 15-16, 18-20, 32-33, 35-37, 45-47 and 57-59 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Patterson, et al. (US 2003/0050008) in view of Xie, et al.

(US 6,781,978) (hereinafter "Xie"). Applicants respectfully disagree for at least the following reason. Independent claim 1, from which claims 15-16 and 18-20 depend, independent claim 21, from which claims 32-33 and 35-37 depend, independent claim 38, from which claims 45-47 depend, and independent claim 49 from which claims 57-59 depend, are believed to be allowable over Patterson alone, as asserted *supra*. Xie does not correct these particular deficiencies. The rejection of dependant claims 15-16, 18-20, 32-33, 35-37, 45-47 and 57-59 under 35 U.S.C. §103(a) is thus obviated. Applicants respectfully request that the Examiner withdraw the rejection of claims 15-16, 18-20, 32-33, 35-37, 45-47 and 57-59 under 35 USC § 103(a) as being obvious over Patterson, in view of Xie.

CONCLUSION

The present application is believed to be in condition for allowance in view of the above comments and amendments. A prompt action to such end is earnestly solicited.

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063 [000324/QUALP802USA]

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicants' undersigned representative at the telephone number below.

Respectfully submitted,

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